ENVIRONMENTAL ASSESSMENT WORKSHEET

Note to preparers: An electronic version of this Environmental Assessment Worksheet (EAW) form and a fact sheet on preparing one are available at the Minnesota Pollution Control Agency (MPCA) Web site www.pca.mn.state.mn.us/programs/envr_p.html. A booklet, *EAW Guidelines*, is also available at the Minnesota Environmental Quality Board (EQB) Web site www.mnplan.state.mn.us or by calling (651) 296-8253. The EAW provides information about a project that may have the potential for significant environmental effects. The EAW is prepared by the Responsible Governmental Unit (RGU) or its agents to determine whether an Environmental Impact Statement (EIS) should be prepared. The project proposer must supply any reasonably accessible data for — but should not complete — the final worksheet. If a complete answer does not fit in the space allotted, attach additional sheets as necessary. The complete question as well as the answer must be included if the EAW is prepared electronically.

Note to reviewers: The Environmental Assessment Worksheet (EAW) provides information about a project that may have the potential for significant environmental effects. This EAW was prepared by the Minnesota Pollution Control Agency (MPCA), acting as the Responsible Governmental Unit (RGU), to determine whether an Environmental Impact Statement (EIS) should be prepared. The project proposer supplied reasonably accessible data for, but did not complete the final worksheet. Comments on the EAW must be submitted to the MPCA during the 30-day comment period which begins with notice of the availability of the EAW in the *Minnesota Environmental Quality Board (EQB) Monitor*. Comments on the EAW should address the accuracy and completeness of information, potential impacts that are reasonably expected to occur that warrant further investigation, and the need for an EIS. A copy of the EAW may be obtained from the MPCA by calling (651) 296-7398. An electronic version of the completed EAW is available at the MPCA Web site www.pca.state.mn.us/news/eaw/index.html#open-eaw.

1. Project Title: 46 MW combined cycle Waterville Plant

2. Proposer: Simon Entergy I, LLC

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3. RGU: Environmental Quality Board

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4. Reason for EAW Preparation:

EIS Scoping		Mandatory EAW	X	Citizen Petition		RGU Discretion		Proposer Volunteered	

If EAW or EIS is mandatory give EQB rule category subpart number and name: 4410.4300, Subpart 3 Electric Generating Facilities

5. Project Location: County Waseca City/Twp Blooming Grove

NW 1/4 NE 1/4 Section 6 Township 108N Range 22W

Tables, Figures, and Appendices attached to the EAW:

- County map showing the general location of the project;
- United States Geological Survey 7.5 minute, 1:24,000 scale map indicating project boundaries (photocopy acceptable);
- Site plan showing all significant project and natural features.

Figures:

1. General Location Map
2. Site Location Map
3. Site Layout
4. Aerial Photograph with NWI Wetland Data;
5. Soils Map

Letters:

1. Letter from Minnesota Department of Natural Resources (DNR); and
2. Letter from Minnesota Historical Society; and
3. Letter from the U.S. Fish and Wildlife Service.

6. Description:

a. Provide a project summary of 50 words or less to be published in the *EQB Monitor*.

Simon Entergy I, LLC (SEI) proposes to build, own and operate a 46-megawatt combined-cycle electrical power generating facility (Waterville Plant) in Blooming Grove Township, near Waseca, Waseca County, Minnesota. The four-acre project includes one gas-fired generator package, one heat recovery steam generator and associated ancillaries operating exclusively on natural gas.

b. Give a complete description of the proposed project and related new construction. Attach additional sheets as necessary. Emphasize construction, operation methods and features that will cause physical manipulation of the environment or will produce wastes. Include modifications to existing equipment or industrial processes and significant demolition, removal or remodeling of existing structures. Indicate the timing and duration of construction activities.

Simon Entergy I, LLC propose to build, own and operate 25 to 46-megawatts of electrical power generating (Waterville Plant) in Blooming Grove Township, near Waseca, Waseca County, Minnesota. The project site is approximately 4 acres and located on the Reliant Energy-Minnegasco's property at the intersection of Hwy 13 and 270th Street SW, south of Waterville, Minnesota. A general vicinity map, a specific site location map (7.5 minute U.S. Geological Survey quadrangle map) and a site layout are included as Figures 1, 2 and 3 respectively. SEI will own, build, and operate the proposed station.

The proposed combined-cycle project (CCTG) will consist of one General Electric (GE) PG5361P Frame 5 simple cycle combustion turbine generator (CTG) package, one Heat Recovery Steam Generator (HRSG) with associated Steam Turbine Generator (STG). The HRSG will be equipped with an integral Selective Catalyst Reduction module for combined cycle operation. The simple cycle combustion turbine will be rated at a maximum output of approximately 26 megawatts (MW) and the heat recovery steam generator/steam turbine will be rated at approximately 19.4 MW. A boiler will be used to supply steam for the turbine during simple cycle operation and combined cycle startups. In addition, the facility consists of recirculating gravel filters, single pass sand filters and ultraviolet disinfection. The treated process cooling water will be discharged by pipe to a drainage ditch. The discharge will flow from the ditch to an unnamed intermittent creek, which is a tributary to Waterville Creek, then to Sakatah Lake. The facility will operate on natural gas only, which will be supplied by Reliant Energy-Minnegasco.

The CTG will utilize steam injection to control NOx emissions, and will also have an inlet air-cooling system to boost power during warm weather. The inlet air-cooling system will utilize evaporator cooling to circulate cooling water through cooling coils located in the inlet air ducting of the CTG to cool the incoming air. A wet mechanical draft-cooling tower will reject the heat absorbed by evaporator cooling. The inlet air-cooling system is expected to operate only during the warm season.

The CCTG plant will have the capacity to produce 46 MW at 59 degrees Fahrenheit (F) when firing natural gas. SEI anticipates operating the facility approximately 4,000 hours per year during periods of high customer energy demand, electrical system emergencies, and for energy sales to Xcel Energy. The CTG bypass stack will be 50 feet tall with an outer diameter of 10 feet, and the HRSG stack will be 60 feet tall with an outer diameter of 10 feet.

In addition to the CTG, the Waterville plant will have a backup diesel generator of approximately 750kW that will operate on No. 2 fuel oil. The diesel generator will provide black start capability to the plant during system wide blackouts, and may be operated to provide backup power during electrical system emergencies. Black starts are initial startups for the turbine when electrical and mechanical power from the turbine are not available. During black starts, natural gas is burned in the turbine to generate pressure thus moving the turbine blades and generating mechanical energy. However, the natural gas that is burned in the turbine must be compressed in order to inject the gas into the pressurized combustion zone. Power from the combustion turbine is used to operate this compressor once the turbine reaches normal operation and the diesel engine powers the compressor during black starts. The diesel engine is also used to help set moving parts (such as the turbine blades) into motion and operate other ancillary equipment. These functions assist turbine startup resulting in shorter startup time.

The No. 2 fuel oil used by the diesel generator will be stored in a small (less than 1,500 gallons) dual wall steel fuel oil storage tank. The small storage tank will be above ground located next to the diesel generator inside the plant building.

City water; storm, and sanitary sewer are not available at the project site. The project will require a private well, a septic system and a discharge pipe for cooling tower blowdown produced during the operation of the inlet-air cooling system and combined cycle operations.

The plant will be electrically connected to Xcel Energy's existing 115 kV transmission line located along the northern border of Waseca County along Highway 13. This line ties into the existing West Faribault, Summit-Loon transmission line south of Waterville, MN. The new transmission line will head directly west from the plant's substation approximately 500 feet to the Xcel Energy transmission line along the north side of Highway 13. SEI anticipates obtaining right-of-way access for the connection of the new transmission line at this location. Waseca County may not have zoning ordinances that address high-voltage transmission lines. The Power Plant Siting Act requires a permit for all transmission lines greater than 100 kV, but allows project proposers to seek local approval for certain types of transmission lines, including those less than 200 kV. If local approval cannot be obtained, the 115 kV transmission line will require a permit from the Minnesota Environmental Quality Board.

A natural gas pipeline will connect the facility to the existing Reliant Energy - Minnegasco transmission natural gas pipeline to the north of the project site. The proposed 6-inch lateral gas pipeline will head directly north from the plant's turbine approximately 400 feet to the existing 16-inch natural gas pipeline, see Figure 3. The new 6-inch natural gas pipeline will be operated at a maximum pressure of 485 psig.

A 650-foot long asphalt access road will be constructed to connect the facility to County Highway 13 west of the site. The road will be approximately 24 feet wide. The access road will service construction equipment traffic and subsequent facility operation and maintenance traffic. SEI anticipates that construction will begin in **September 2002**. The combustion turbine equipment will arrive on site by **May 2003**. Operation of the facility is anticipated to begin by **May 2004.**

c. Explain the project purpose; if the project will be carried out by a governmental unit, explain the need for the project and identify its beneficiaries.

SEI is the first minority independent power producer company in the nation. SEI is located in Waseca County, Minnesota. The purpose of the project is to provide additional generation services to Xcel Energy's existing 115 kV transmission network in Southern Minnesota, due to the aging facility and anticipated load growth.

d. Are future stages of this development including development on any outlots planned or likely to happen? ☐ Yes ☒ No
If yes, briefly describe future stages, relationship to present project, timeline and plans for environmental review.

e. Is this project a subsequent stage of an earlier project? ☐ Yes ☒ No
If yes, briefly describe the past development, timeline and any past environmental review.

7. Project Magnitude Data

Total Project Area (acres) 4 acres
Number of Residential Units: Unattached NA Attached NA maximum units per building NA
Commercial/Industrial/Institutional Building Area (gross floor space): total square feet NA

Indicate area of specific uses (in square feet):

Table 7-1
Specific Uses

Use	Square Footage	Acres
Office	0	0
Manufacturing	0	0
Retail	0	0
Turbine/Generator Enclosure	5,686	0.13
Auxiliary Building	3,500	0.08
Fuel Oil Storage Facility	34	0.0007
Substation	3,600	0.08
Neutralization Tank	113	0.002
Treated Water Storage Tank	38	0.0008
Inlet air cooling System Cooling Tower	4,032	0.09

Use	Square Footage	Acres
Access Road	27,676	0.63
Warehouse	0	0
Institutional	0	0
Light industrial	0	0
Agricultural	0	0
Other commercial (specify)	0	0
Building height* (stack)	60 feet	NA
Ammonia Storage Tank	49	0.001
Raw Water Storage Tank	490	0.01

**If over 2 stories, compare to heights of nearby buildings*

Building/Stack	Height
Steam Turbine Stack	50'
Steam Turbine	20'
HRSG Stack	60'
Boiler Stack	30'

8. Permits and approvals required. List all known local, state and federal permits, approvals and financial assistance for the project. Include modifications of any existing permits, governmental review of plans, and all direct and indirect forms of public financial assistance including bond guarantees, Tax Increment Financing and infrastructure.

Unit of Government	Type of Application	Status
FEDERAL		
FERC	Pipeline Permit	To be applied for if needed
EPA	Request for Certificate of Representation (Acid Rain Permit)	To be developed
	Spill Prevention, Control and Countermeasure Plan	To be developed
Army Corp of Engineers	Section 404 Wetland Permit	To be applied for if needed
	Section 10 Permit	To be applied for if needed
U.S. Fish and Wildlife Service	Threatened and Endangered Species Review	Completed
STATE OF MINNESOTA		
Minnesota Environmental Quality Board	EAW	In process
	HVTL permit for 115 kV transmission line	To be applied for if needed
	Pipeline Routing Permit	To be applied for if needed
MPCA	NPDES/SDS Industrial Waste Water Discharge for Non-contact Cooling Water	To be applied for
	401 Water Quality Certification	To be applied for if needed
	Above-ground Storage Tank Permit	To be applied for if needed
	Construction Stormwater Permit	To be applied for
	Air Emission Facility Permit	Applied for
	NPDES Stormwater Permit	To be applied for
	Acid Rain Phase II Application and a New Unit Exemption for the small supplemental generator	To be applied for if needed
State Historical Preservation Office	Cultural Resources Review	Completed

Department of Transportation	Access Road Permit and/or Review	To be applied for
Department of Health	Well Permit Application	To be applied for
Department of Natural Resources	Groundwater Appropriation Permit	In Process
	Threatened and Endangered Species Review	Completed
LOCAL AGENCIES		
Waseca County	Construction Site Plan Review	To be completed if needed
	Utility Plan Review	To be completed if needed
	Drainage and Grading Plan Review	To be completed if needed
	Individual Septic Treatment System Permit	To be applied for
	Wetland Conservation Act Exemption	To be applied for
	Water Well Permit	To be applied for
	Conditional Use Permit	To be applied for
	Zoning Permit	To be applied for
	Building Permit	To be applied for

9. Land use. Describe current and recent past land use and development on the site and on adjacent lands. Discuss project compatibility with adjacent and nearby land uses. Indicate whether any potential conflicts involve environmental matters. Identify any potential environmental hazards due to past site uses, such as soil contamination or abandoned storage tanks, or proximity to nearby hazardous liquid or gas pipelines.

The site is located in the northeast quarter of section 6, Township108 North and Range 22 West in Waseca County, Minnesota. The project site is approximately 4 acres and located within 37 acres of Reliant Energy - Minnegasco's property at the intersection of Hwy 13 and 270th Street SW, south of Waterville, MN. The site is currently zoned for agricultural use. The site is shown on the U.S. Geological Survey 7.5-minute quadrangle map in Figure 2 and on an aerial photograph in Figure 4.

The proposed transmission line will connect the plant's substation with Xcel Energy's existing 115 kV transmission line located approximately 500 feet to the west of the site. The existing land use along the proposed transmission line route is open land.

A natural gas pipeline built by Reliant Energy-Minnegasco will connect the facility to Reliant Energy - Minnegasco's existing natural gas pipeline to the north of the project site. The proposed 6-inch gas pipeline will be approximately 400-feet long. The existing land use along the proposed pipeline route is open land.

10. Cover Types. Estimate the acreage of the site with each of the following cover types before and after development:

	Before	**After**		**Before**	**After**
Types 1-8 wetlands			Lawn/landscaping		
Wooded/forest	0.6	0.6	Impervious Surfaces	0	1.127
Brush/grassland	3.4	2.273*	Other (describe)		
Cropland					
			TOTAL	4.0	4.0

* Landscaping will be re-planted in native grasses.

11. Fish, Wildlife, and Ecologically Sensitive Resources.

a. Identify fish and wildlife resources and habitats on or near the site and describe how they would be affected by the project. Describe any measures to be taken to minimize or avoid impacts.

The U.S. Fish and Wildlife Service has reviewed the project area for known occurrences of federally listed or proposed threatened or endangered species or their critical habitat. A response letter from the U.S. Fish and Wildlife Service dated March 26, 2002, included in Appendix A, indicates there are no known significant fish, wildlife, and ecologically sensitive resources on the site.

b. Are any state (endangered or threatened) species, rare plant communities or other sensitive ecological resources such as native prairie habitat, colonial waterbird nesting colonies or regionally rare plant communities on or near the site? ☐ Yes ☒ No
If yes, describe the resource and how it would be affected by the project. Indicate if a site survey of the resources has been conducted and describe the results. If the DNR Natural Heritage and Nongame Research program has been contacted give the correspondence reference number. ERDB 20020411
Describe measures to minimize or avoid adverse impacts.

The MN-DNR Natural Heritage Program has reviewed the project area within a 1-mile radius for known occurrences of federal and state-listed threatened or endangered species or other significant features. A response letter from the MN-DNR Natural Heritage Program dated November 14, 2001, included in Appendix A, indicates there are no known occurrences of rare species or natural communities in the area searched.

12. Physical Impacts on Water Resources. Will the project involve the physical or hydrologic alteration (dredging, filling, stream diversion, outfall structure, diking, and impoundment) of any surface waters such as a lake, pond, wetland, stream or drainage ditch? ☒ Yes ☐ No
If yes, identify water resource affected. Describe alternatives considered and proposed mitigation measures to minimize impacts. Give the DNR Protected Waters Inventory (PWI) number(s) if the water resources affected are on the PWI.

Treated non-contact process cooling water will be discharged to a pipe which will run from the cooling towers to a nearby drainage ditch, see Figure 4. The discharge will flow from the ditch to an unnamed intermittent creek, which is a tributary to Waterville Creek, then to Sakatah Lake. The approximate average process cooling water discharge flow will range between 70 to 275 gallons per minute (gpm). The cooling water discharge point will be designed and constructed with the appropriate materials including geo-textile fabric and rip-rap to dissipate energy and control erosion. The Waseca County Soil and Water Conservation District will oversee the design, construction and adequacy of these measures.

The temperature of the discharge water will be no more than five degrees Fahrenheit above the natural temperature of the drainage ditch based on a monthly average of the maximum daily temperature. Under no circumstances shall the water temperature exceed the daily average temperature of 86 degrees Fahrenheit.

13. Water Use. Will the project involve installation or abandonment of any water wells, connection to or changes in any public water supply or appropriation of any ground or surface water (including dewatering)? ☒ Yes ☐ No

If yes, as applicable, give location and purpose of any new wells; public supply affected, changes to be made, and water quantities to be used; the source, duration, quantity and purpose of any appropriations; and unique well numbers and DNR appropriation permit numbers, if known. Identify any existing and new wells on the site map. If there are no wells known on site, explain methodology used to determine.

The proposed project will involve the installation of 2 or 3 production wells finished in the Prairie du Chien aquifer. Approximately 262.8 million gallons of water per year (mgy) is required for potable consumption, steam generation and to feed the cooling towers on site. In addition, 5,000 gallons of water annually may be required for turbine washing at a rate of one time per week. The purpose of washing the turbine is to remove any particulates accumulated on the turbine blades. A table summarizing the estimated water requirements is provided below:

Process/Use	Estimated Quantity of Water Required/Utilized (gpy)	Estimated Quantity of Water Discharged to Septic System (mgy)	Estimated Quantity of Water Discharged to Holding Tank (gpy)	Estimated Quantity of Water Discharged to Drainage Ditch (mgy)
Potable Water	<1,000,000	<1		
Turbine Washing	5,000		<5,000	
Steam Generation	46,000,000			6.2
Non-Contact Cooling Water	215,800,000			30.592 - 138.34
Total	**262,805,000**	**<1**	**<5,000**	**36.792 - 144.54**

SEI currently anticipates installing 2 or 3 production wells at the site to a depth of 300 feet. A pump test will be completed to determine the number of wells required and the effect on surrounding wells.

Based on the Minnesota Department of Health, Well and Boring Record #00215683 located 500 feet from the site, the underlying stratigraphy of the site consists of 177 feet of sand and gravel underlain by the Prairie du Chien Group (Shakopee Formation) between 177 and 416 feet below the surface. Jordan Sandstone underlies the Prairie Du Chien Group. The well and boring record is attached in Appendix B. The proposed production wells will be finished at a depth of 300 feet in the Prairie du Chien aquifer, based on published information, and will have a specific capacity of 7.6-46 gallons per minute per foot of drawdown based on the Water Resources of the Cannon River Watershed Atlas HA-522.

14. Water-related land use management districts. Does any part of the project involve a shoreland zoning district, a delineated 100-year flood plain, or a state or federally designated wild or scenic river land use district? ☐ Yes ☒ No

If yes, identify the district and discuss project compatibility with district land use restrictions.

15. Water Surface Use. Will the project change the number or type of watercraft on any water body? ☐ Yes ☒ No

If yes, indicate the current and projected watercraft usage and discuss any potential overcrowding or conflicts with other uses.

16. Erosion and Sedimentation. Give the acreage to be graded or excavated and the cubic yards of soil to be moved: **3.4** acres; **15,000** cubic yards. Describe any steep slopes or highly erodible soils and identify them on the site map. Describe any erosion and sedimentation control measures to be used during and after project construction.

Based on the Waseca County Soil Survey, the primary soil classification within the project area is clay loam. Other soils include silty clay loam, Lester-Storden Complex and peat. Based on the Waseca County Soil Survey, no highly erodible soils are located within the project area. Steep slopes (12% slopes) are present within the project area, see Figure 5.

A temporary erosion and sedimentation control plan will be developed as part of the NPDES Stormwater Discharge Permit and Stormwater Pollution Prevention Plan. The plan will include best management practices (BMPs) to prevent sediment from leaving the site and entering the drainage ditch or wetland. BMPs that will be used during construction may include:

- Installation of silt fences at construction perimeters, installed before excavation and grading and maintained until stabilization of the soil is achieved;
- Stockpile area established with erosion control measures;
- Areas not planned to be paved or built on will be mulched and planted in a timely manner to reduce erosion and seeding mortality; and
- Outfalls of culverts and NDPES cooling water discharge will be equipped with riprap to dissipate energy and control erosion.

17. Water Quality - Surface Water Runoff.

a. Compare the quantity and quality of site runoff before and after the project. Describe permanent controls to manage or treat runoff. Describe any stormwater pollution prevention plans.

The turbine, auxiliary equipment, buildings, interior roads and parking will occupy approximately 1.12 acres. The majority of the site will remain pervious. During construction, soil in the vicinity of the developed portion of the site will be graded to promote infiltration and to minimize direct runoff into the wetland or drainage ditch. BMPs will be used during construction and after construction to ensure minimal changes to the quality of runoff.

Since the project is less than 5 acres, a construction stormwater permit is not required. However, in December 2002 the Storm Water Phase II Program for projects greater than 1 acre but less than 5 acres will be implemented. At that time SEI will review the need for a construction stormwater permit. The need for a stormwater detention basin also will be discussed with the local governmental unit prior to construction.

A Stormwater Pollution Prevention Plan (SPPP) is being developed and will be ready for implementation prior to construction completion.

b. Identify routes and receiving water bodies for runoff from the site; include major downstream water bodies as well as the immediate receiving waters. Estimate impact runoff on the quality of receiving waters.

Runoff from the property drains into a Type I wetland located southwest of the property, see Figure 4. This wetland flows into an unnamed intermittent creek, which is a tributary to Waterville creek, then to Sakatah Lake. The impact of runoff on the quality of the receiving is expected to be minimal. BMPs will be used during construction to minimize the impact. If necessary, a stormwater detention basin may be installed.

18. Water Quality – Wastewater.

a. Describe sources, composition and quantities of all sanitary, municipal and industrial wastewater produced or treated at the site.

Non-contact process cooling water will be discharged to pipe which will run from the cooling towers to a drainage ditch. The cooling tower water will be treated with a scale and corrosion inhibitor, if required, and an oxidizing biocide. The water treatment requirements have not been finalized.

Approximately 5,000 gallons of wastewater could be generated annually from washing the turbine once per week. The purpose of washing the turbine is to remove any particulates accumulated on the turbine blades. The used wash water will be stored in a holding tank on site. Twice per year, the tank will be pumped out and the wash water will be trucked to a permitted off site disposal facility.

Domestic wastewater will be generated (<1 mgy) and will be discharged to the new onsite septic system.

b. Describe waste treatment methods or pollution prevention efforts and give estimates of composition after treatment. Identify receiving waters, including major downstream water bodies, and estimate the discharge impact on the quality of receiving waters. If the project involves on-site sewage systems, discuss the suitability of site conditions for such systems.

A Spill Prevention, Control and Countermeasure Plan (SPCC), which will describe the handling of contaminated water will be developed, implemented and maintained on site. Spill containment will be provided for the fuel storage area and the transformer vaults. The transformer vaults, floor drains within the turbine enclosure and the fuel unloading area will each have an oily water separator, which will discharge the water to the on-site individual septic treatment system. Any oil will be cleaned from the oily water separator and disposed of properly, as defined in the SPCC.

The project will involve the installation of an onsite septic system for sanitary sewage disposal.

c. If wastes will be discharged into a publicly owned treatment facility, identify the facility, describe any pretreatment provisions and discuss the facility's ability to handle the volume and composition of wastes, identifying any improvements necessary.

NA

d. If the project requires disposal of liquid animal manure, describe disposal technique and location and discuss capacity to handle the volume and composition of manure. Identify any improvements necessary. Describe any required setbacks for land disposal systems.

NA

19. Geologic hazards and soil conditions.

a. Approximate depth (in feet) to Ground water: 0 minimum; 15 average.
Bedrock: 174 minimum; 174 average.
Describe any of the following geologic site hazards to ground water and also identify them on the site map: sinkholes, shallow limestone formations or karst conditions. Describe measures to avoid or minimize environmental problems due to any of these hazards.

Sinkholes, shallow limestone formations or karst conditions are not known to exist on site.

b. Describe the soils on the site, giving SCS classifications, if known. Discuss soil granularity and potential for groundwater contamination from wastes or chemicals spread or spilled onto the soils. Discuss any mitigation measures to prevent such contamination.

Based on the Waseca County Soil Survey, the primary soil classification within the project area is clay loam. Other soils include silty clay loam, Lester-Storden Complex and peat.

The Prairie du Chien Group (Shakopee Formation) is located between 177 and 416 feet below the surface based on the, Minnesota Department of Health, Well and Boring Record #00215683, located 500 feet from the site. The Prairie du Chien Group is underlain by Jordan Sandstone and overlain by glacial drift. The well and boring record is attached in Appendix B. The proposed production wells will be finished in the Prairie du Chien aquifer.

The potential for groundwater contamination from wastes or spilled chemicals is minimal because the clay loam surface stratigraphy will reduce water infiltration. BMPs will be implemented and the fuel oil will be stored in a steel dual wall aboveground tank with a secondary containment system.

20. Solid Wastes, Hazardous Wastes, Storage Tanks.

a. Describe types, amounts and compositions of solid or hazardous wastes, including solid animal manure, sludge and ash, produced during construction and operation. Identify method and location of disposal. For projects generating municipal solid waste, indicate if there is a source separation plan; describe how the project will be modified for recycling. If hazardous waste is generated, indicate if there is a hazardous waste minimization plan and routine hazardous waste reduction assessments.

During construction, solid waste produced will be disposed off-site. The contractor will be responsible for solid waste disposal. The solid waste will include normal construction debris such as scrap wood, plastics, sheetrock, packing material, scrap metals and electrical wire. Recycling of waste materials will be the responsibility of the contractors. No hazardous waste is anticipated during construction, but if generated, its proper disposal will be the responsibility of the contractor.

Hazardous waste will not be generated during operations.

b. Identify any toxic or hazardous materials to be used or present at the site and identify measures to be used to prevent them from contaminating groundwater. If the use of toxic or hazardous materials will lead to a regulated waste, discharge or emission, discuss any alternatives considered to minimize or eliminate the waste, discharge or emission.

Fuel oil and ammonia will be present at the site and stored in separate aboveground storage tanks. The tanks will have secondary containment constructed in accordance with the Minnesota Rules Chapter 7151 and the Minnesota Uniform Fire Code.

c. Indicate the number, location, size and use of any above or below ground tanks to store petroleum products or other materials, except water. Describe any emergency response containment plans.

There will be one dual wall 1,500-gallon fuel oil storage tank and one 872-gallon ammonia tank on site. There will also be one 10,000-gallon oily water separator tank. An emergency response plan in conformance with SPCC will be developed and maintained on site.

21. Traffic. Parking spaces added: 10 Existing spaces (if project involves expansion): 0
Estimated total average daily traffic generated: 5-40 vehicles* Estimated maximum peak hour traffic generated (if known) and its timing: 6am – 5pm Provide an estimate of the impact on traffic congestion affected roads and describe any traffic improvements necessary. If the project is within the Twin Cities metropolitan area, discuss its impact on the regional transportation system.

*During construction the estimated average daily traffic is expected to be 10 to 40 vehicles per day. During operation the estimated average daily traffic is expected to be less than 5 vehicles per day.

The project is located in Blooming Grove Township in Waseca County, the impacts on traffic congestion are expected to be minimal during construction. During combined cycle operations, 2 to 3 employees will be on site, traffic congestion impact is not expected.

22. Vehicle-related Air Emissions. Estimate the effect of the project's traffic generation on air quality, including carbon monoxide levels. Discuss the effect of traffic improvements or other mitigation measures on air quality impacts. Note: If the project involves 500 or more parking spaces, consult *EAW Guidelines* about whether a detailed air quality analysis is needed.

Vehicle related air emissions due to the proposed project are not expected to create air quality impacts.

23. Stationary Source Air Emissions. Describe the type, sources, quantities and compositions of any emissions from stationary sources of air emissions such as boilers, exhaust stacks or fugitive dust sources. Include any hazardous air pollutants (consult *EAW Guidelines* for a listing), any greenhouse gases (such as carbon dioxide, methane, and nitrous oxides), and ozone-depleting chemicals (chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons or sulfur hexafluoride). Also describe any proposed pollution prevention techniques and proposed air pollution control devices. Describe the impacts on air quality.

The primary air emission sources at the Waterville Facility will be a 46 megawatt (net) natural gas combustion turbine, a 283.5 million British thermal units per hour (MMBtu/hr) natural gas fired boiler, and a 465 horsepower (hp) black start diesel engine. Cooling towers will also be present at the facility; however, their emissions will be very small. The Waterville facility will emit particulate matter less than ten microns in diameter (PM_{10}), sulfur dioxide (SO_2), oxides of nitrogen (NO_x), carbon monoxide (CO), volatile organic compounds (VOCs), ammonia (NH_3), and hazardous air pollutants (HAPs). The total potential emissions from the facility (including the cooling towers) are shown in Table 23-1.

TABLE 23-1
Potential Emission from the Waterville Facility (in tons per year)

PM/PM_{10}	SO_2	NO_x	CO	VOC	NH_3	HAPs
12.8	6.5	97.3	85.8	4.2	38.6	2.0

The turbine and boiler will burn natural gas only. The turbine will initially be installed and operated as a simple cycle unit until the heat recovery steam generation (HRSG) module is installed and functional. During simple cycle operation the turbine NO_x emissions will be limited to 42 parts per million (ppm) using steam injection. During combined cycle operation (*i.e.*, routing the turbine exhaust through the attached HRSG unit to increase energy efficiency), the NO_x emissions will be limited to 12 ppm and the CO emission will be limited to 20 ppm using selective catalytic reduction (SCR) and an oxidation catalyst, respectively. SCR technology consists of ammonia injection upstream of a catalyst in the turbine exhaust to convert NO_x to N_2 and O_2. As a result of the SCR control, some unreacted ammonia will pass through the catalyst system and vent to the atmosphere. A Cummins diesel engine will run for about 9 minutes to assist the turbine during each startup. A boiler will be used to supply steam for the turbine during simple cycle operation and combined cycle startups. The cooling water and boiler water for the turbine and HRSG system will be cooled using cooling towers. These cooling towers will be very small sources of PM_{10} and VOC emissions.

As indicated by the potential emissions in Table 23-1, the facility is a minor source for Title V permitting and Prevention of Significant Deterioration (PSD) review/ New Source Review (NSR). Compliance with the state and national ambient air quality standards (NAAQS) are not specifically required for minor sources. In addition, it is not anticipated that the facility will cause or significantly contribute to a violation in the NAAQS or PSD ambient air increments. Similar combustion turbines have demonstrated excellent dispersion characteristics with high exhaust temperatures and high exit velocities. These factors are conducive of good air dispersion that results in low ambient air impacts. Waseca County is in attainment of all criteria pollutants.

The anticipated potential hazardous air pollutant (HAP) emissions were quantified in the air emissions permit application to be submitted to the MPCA. As indicated in Table 23-1, the total HAP emissions will be well below the major source thresholds of 10 tons per year for individual HAPs and 25 tons per year for the aggregate of all HAPs. An Air Toxic Review (ATR) was not required for the proposed facility as part of the EAW because the primary fuel proposed for combustion is natural gas. The MPCA does not typically require boilers and turbines fired primarily by natural gas to complete an ATR.

24. Odors, noise and dust. Will the project generate odors, noise or dust during construction or during operation? ☒ Yes ☐ No
If yes, describe sources, characteristics, duration, quantities or intensity and any proposed measures to mitigate adverse impacts. Also identify locations of nearby sensitive receptors and estimate impacts on them. Discuss potential impacts on human health or quality of life. (Note: fugitive dust generated by operations may be discussed at item 23 instead of here.)

Odors
The proposed project will not generate significant odors during construction or operation.

Noise

Noise levels in the immediate surrounding area will increase during construction. The construction noise level will depend on the pieces and type of equipment being operated. The closest noise sensitive area is a residence (Noise Area Classification 1) located 1200 feet from the proposed site.

Operation Noise

The noise generated from the turbine is expected to be 90 decibels of the A-weighted scale (dBA) one meter from the turbine. Cooling tower system and turbine exhaust stack will generate 82 dBA at a distance of 20 feet and 55 dBA at a distance of 300 meters. Using basic noise attenuation calculations, it is determined that the combined noise from all three sources at a distance of one meter (3.28 feet) is 105.5 dBA. Noise of this level would attenuate quickly over distance. Based on a model simulation performed using Power Acoustics, Inc.'s SPM9613 noise attenuation model, the noise from the facility would be 38.9 dBA at the nearest residence 1200 feet away. This noise levels is below MPCA noise limit of 50 dBA L_{50} at residences and the Federal Energy Regulatory Commission noise limit of 55 dBA L_{dn}.

Dust

Construction of the facility is anticipated to generate dust. Non-paved roads and work surfaces will be sprayed with water to minimize dust levels. Fugitive dust in objectionable quantities is not expected. No dust will be generated during operations.

25. Nearby resources. Are any of the following resources on or in proximity to the site?

a. Archaeological, historical, or architectural resources? ☐ Yes ☒ No
b. Prime or unique farmlands or land within an agricultural preserve? ☒ Yes ☐ No
c. Designated parks, recreation areas, or trails? ☐ Yes ☒ No
d. Scenic views and vistas? ☐ Yes ☒ No
e. Other unique resources? ☐ Yes ☒ No

If yes, describe the resource and identify any project-related impacts on the resources. Describe any measures to minimize or avoid adverse impacts.

Prime farmland located on the site will no longer be available for agricultural use.

26. Visual impacts. Will the project create adverse visual impacts during construction or operation? Such as glare from intense lights, lights visible in wilderness areas and large visible plumes from cooling towers or exhaust stacks? ☒ Yes ☐ No
If yes, explain.

The proposed facility will have a 50-foot stack on the CTG and the HRG will have a 60-foot stack. Due to low opacity requirements, a plume or vapor cloud should not be visible from the exhaust stacks during normal operations when combusting natural gas except during periods of below freezing temperatures.

Security lighting will be used at night to ensure safety on the grounds. Lighting impacts will be similar to the impacts from yard and street lights as well as impacts from the existing Reliant Energy - Minnegasco property located northwest of the proposed site.

27. Compatibility with plans and land use regulations. Is the project subject to an adopted local comprehensive plan, land use plan or regulation, or other applicable land use, water, or resource management plan of a local, regional, state or federal agency? ☒ Yes ☐ No
If yes, describe the plan, discuss its compatibility with the project and explain how any conflicts will be resolved. If no, explain.

Currently, the proposed project is not in compliance with the Waseca County Land Use Plan because the land is currently zoned for agricultural use. SEI is applying for a conditional use permit for the proposed project to comply with the Waseca County Land Use Plan. Waseca County is in the process of updating their comprehensive plan. SEI is planning to attend a planning commission meeting to discuss the project and potentially how it would be incorporated into the 2003 Comprehensive Plan

28. Impact on infrastructure and public services. Will new or expanded utilities, roads, other infrastructure or public services be required to serve the project? ☐ Yes ☒ No
If yes, describe the new or additional infrastructure or services needed. (Note: any infrastructure that is a connected action with respect to the project must be assessed in the EAW; see *EAW Guidelines* for details.)

29. Cumulative impacts. Minn. R. 4410.1700, subp. 7, item B requires that the RGU consider the "cumulative potential effects of related or anticipated future projects" when determining the need for an environmental impact statement. Identify any past, present or reasonably foreseeable future projects that may interact with the project described in this EAW in such a way as to cause cumulative impacts. Describe the nature of the cumulative impacts and summarize any other available information relevant to determining whether there is potential for significant environmental effects due to cumulative impacts (or discuss each cumulative impact under appropriate item(s) elsewhere on this form).

This project is not part of any past, present or reasonably foreseeable future project.

30. Other Potential Environmental Impacts. If the project may cause any adverse environmental impacts not addressed by items 1 to 28, identify and discuss them here, along with any proposed mitigation.

There are no known environmental impacts not previously discussed.

31. Summary of issues. List any impacts and issues identified above that may require further investigation before the project is begun. Discuss any alternatives or mitigative measures that have been or may be considered for these impacts and issues, including those that have been or may be ordered as permit conditions.

Fish, Wildlife, and Ecologically Sensitive Resources. The U.S. Fish and Wildlife Service determined there are no known significant fish, wildlife, and ecologically sensitive resources within the project area.

Threatened and Endangered Species. The MN-DNR reviewed the project area and has concluded that known occurrences of rare or natural features are not present within the project area.

Land Use. Reliant Energy - Minnegasco owns 37 acres of land in the proposed project area. SEI proposes to lease 4 acres of land within the 37-acre plot from Reliant Energy-Minnegasco for the proposed

project. The proposed project area is adjacent to an existing Reliant Energy-Minnegasco natural gas underground storage facility. No potential land use conflicts are known to exist.

Water Resources. No adverse impacts to water resources including wetlands are anticipated.

Water Use. SEI proposes to install two or three production wells depending on pump test results. The anticipated water uses include; potable water (<1 mgy), cooling water to be re-circulated through the cooling towers (215.8 mgy), water required for steam generation (46 mgy), and water that may be required for weekly turbine washing (5,000 gallons annually).

Water Quality. During construction, soil in the vicinity of the developed portion of the site will be graded to promote infiltration and to minimize direct runoff into the wetland or drainage ditch. BMPs will be used during construction and after construction to ensure minimal changes to the quality of runoff. A Stormwater Pollution Prevention Plan is being developed and will be ready for implementation prior to construction completion.

A Spill Prevention, Control and Countermeasure Plan (SPCC), which will describe the handling of contaminated water will be developed, implemented and maintained on site. Spill containment will be provided for the fuel storage area and the transformer vaults. The transformer vaults, floor drains within the turbine enclosure and the fuel unloading area will have oily water separators, which will discharge the water to the on-site individual septic system. Any oil will be cleaned from the oily water separator and disposed of properly, as defined in the SPCC.

Erosion and Sedimentation. A temporary erosion and sedimentation control plan will be developed as part of the NPDES Storm Water Discharge Permit and Storm Water Pollution Prevention Plan. The plan will include best management practices (BMPs) to prevent sediment from leaving the site and entering the drainage ditch or wetland.

Geologic Hazards. There is no evidence of sinkholes or shallow limestone formations within the project area.

Solid Wastes, Hazardous Wastes, Storage Tanks. The contractor will properly dispose of all solid wastes produced during construction. All solid or hazardous wastes generated during operations will be disposed at a permitted facility. One 1,500-gallon fuel oil storage tank, one 10,000-gallon oily water separator tank and one 872-gallon ammonia storage tank will be kept on site.

Traffic. The impacts on traffic congestion are expected to be minimal during construction. During operation, traffic congestion impact is not expected.

Air Emissions. The project is considered a synthetic minor source of emissions under the federal New Source Review (NSR) Prevention of Significant Deterioration (PSD) program (40 CFR 52.21) and the Federal Title V Operating permit program (40 CFR 70). A complete air emission permit application detailing all proposed facility operations will be submitted tot he MPCA. It is anticipated the proposed facility will have negligible impacts with respect to the ambient air quality standards.

Odor, Noise and Dust. The proposed project will not generate significant odors during construction or operation.

Noise levels in the immediate surrounding area will increase during construction. The construction noise level will depend on the pieces and type of equipment being operated.

Noise will be generated by the facility during operation; however, the levels that will result at the nearest residence are below the applicable state and federal limits.

Significant quantities of fugitive dust are not expected to be generated as part of the proposed project. Dust control measures will be taken.

Archeological, Historical, or Architectural Resources. The Minnesota State Historic Preservation Office review the proposed project and determined that no properties eligible for or listed on the National Register of Historic places will be affected.

Visual Impacts. The proposed facility will have a 50-foot stack on the turbine and a 60-foot stack on the heat recovery generator. Due to low opacity, a plume or vapor cloud should not be visible from the exhaust stacks during normal operations when combusting natural fuel except during periods of below freezing temperatures.

RGU CERTIFICATION.

I hereby certify that:

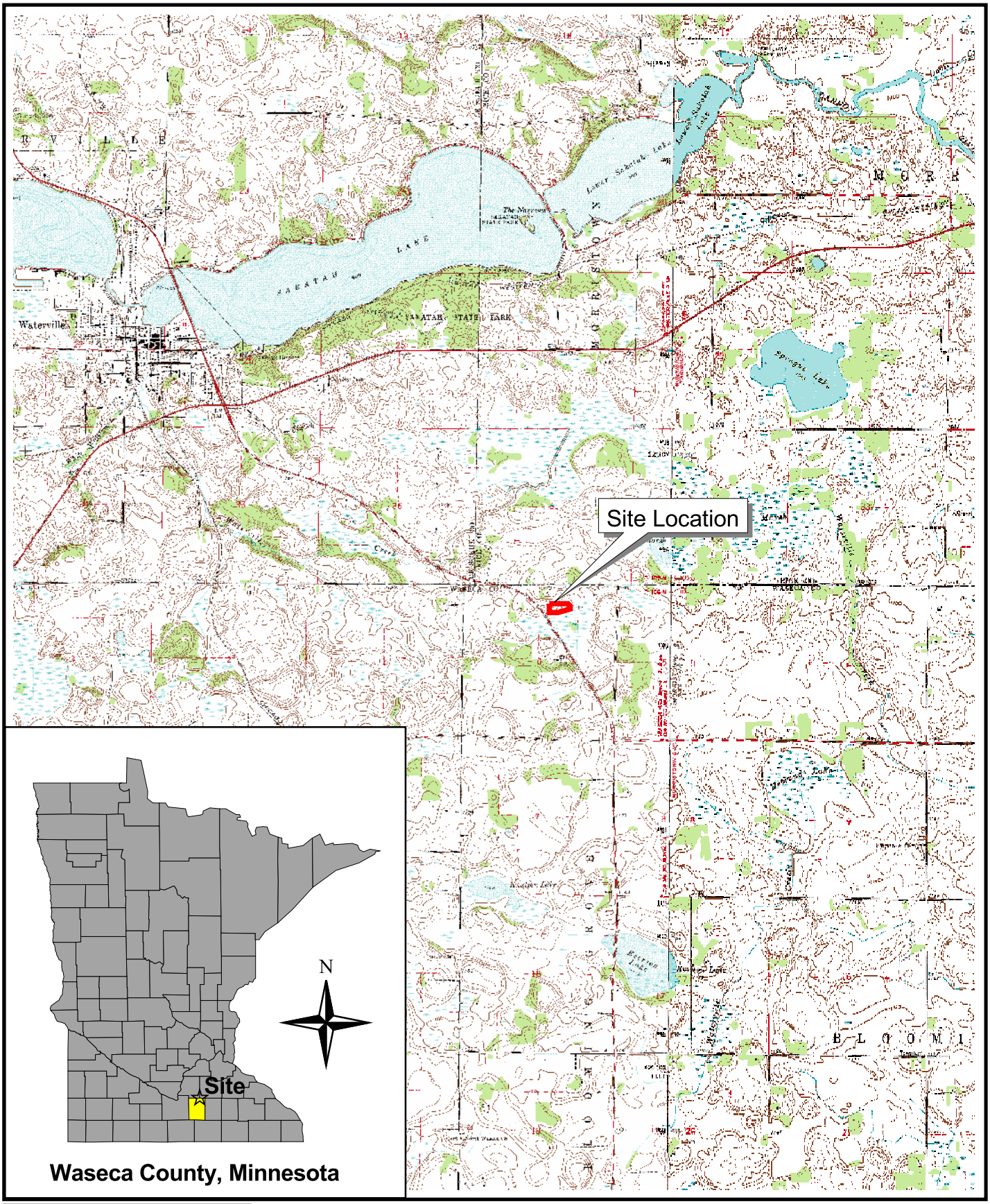
- The information contained in this document is accurate and complete to the best of my knowledge.
- The EAW describes the complete project; there are no other projects, stages or components other than those described in this document, which are related to the project as connected actions or phased actions, as defined at Minn. R. 4410.0200, subps. 9b and 60, respectively.
- Copies of this EAW are being sent to the entire EQB distribution list.

Name and Title of Signer: **William Cole Storm**
EQB Staff

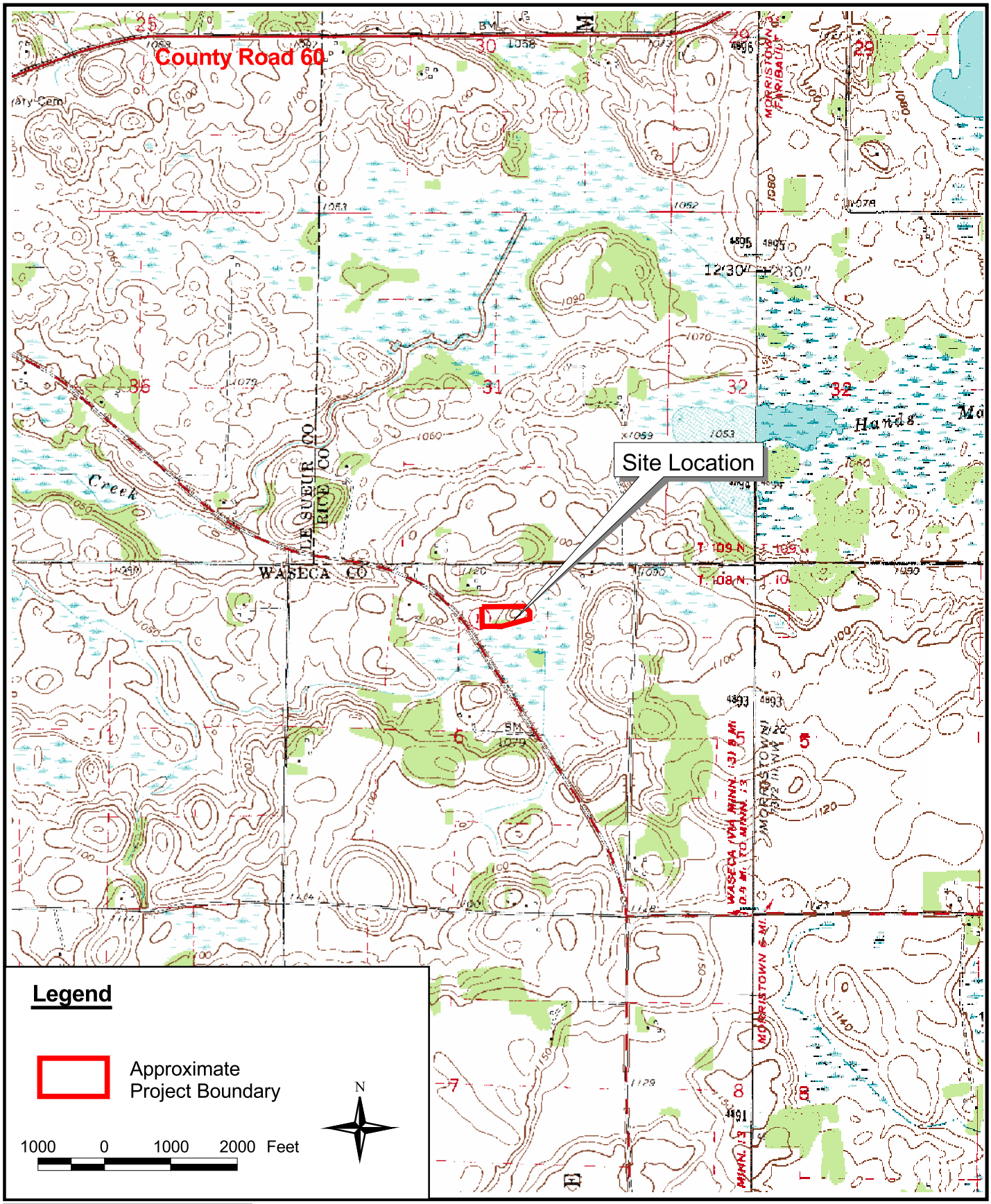
Date:

The format of the Environmental Assessment Worksheet was prepared by the staff of the Environmental Quality Board at Minnesota Planning. For additional information, worksheets or for *EAW Guidelines*, contact: Environmental Quality Board, 658 Cedar St., St. Paul, MN 55155, 651-296-8253, or at their Web site www.mnplan.state.mn.us.

Figures



Waterville Combined Cycle Project	**Figure 1** **General Location Map**	DATE: 3/8/02 REVISED: 6/12/02 SCALE: 1:54,000 DRAWN BY: AMRONAYNE H:\AVPROJ\2002\Simon_Industries\EAW.apr



Waterville Combined Cycle Project

Figure 2
Site Location Map
NW 1/4, NE 1/4 Section 6, T108N, R22W

DATE: 3/8/02
REVISED:
SCALE: 1:24,000
DRAWN BY: AMRONAYNE
H:\AVPROJ\2002\Simon_Industries\EAW.apr

NO.	REVISION	BY	CHK'D	DATE

WETLAND EDGE
16" GAS PIPE
6" GAS PIPE
4" GAS PIPE
GRAVEL ROAD
PAVED ROAD

W N E S

MINNEGASCO PUMP STATION

16" NATURAL GAS PIPELINE

16" NATURAL GAS PIPELINE

PROPOSED 6" NATURAL GAS PIPELINE

577'

101'

392.56'

125.36'

PROPOSED PROPERTY BOUNDARY

NEUTRALIZATION TANK (12'Ø x 18')

TREATED WATER STORAGE (7'Ø x 40')

RAW WATER STORAGE (28'Ø x 20')

FEED WATER PUMPS

2 - 6" WELLS

MAIN STACK (53'-6" TALL)

WATER TREATMENT (upper/lower)

PUMP ROOM

CONTROL ROOM (upper)

BATTERIES/ MCC (lower)

STEAM TURBINE (20' TALL)

HRSG STACK (80' TALL)

33'

3 CELL COOLING TOWER

95'

216.37'

HRSG

INLET COOLING SKID

BY-PASS STACK (79' TALL)

AUX BOILER

STEP-UP X-FMR (18' TALL)

SUB STATION SWITCH YARD

AUX X-FMR (10' TALL)

AUX X-FMR (10' TALL)

315'

181'

PARKING

27'

6" NATURAL GAS PIPELINE

PROPOSED TRANSMISSION LINE

HWY 13

PROPOSED 650' ASPHALT ACCESS ROAD

PROPOSED NON-CONTACT PROCESS COOLING WATER DISCHARGE PIPE

WETLAND EDGE

1120 1115 1110 1105 1100 1095 1090 1085 1080

PRELIMINARY
05/02/02

Simon Industries

FAGEN ENGINEERING LLC

CIVIL – STRUCTURAL – MECHANICAL – ELECTRICAL ENGINEERS

501 West Highway 212, P.O. Box 159
Granite Falls, MN 56241 Tel. 320-564-4573

SIMON INDUSTRIES, INC
WASECA, MINNESOTA

43 MW COMBINED-CYCLE
WATERVILLE STATION

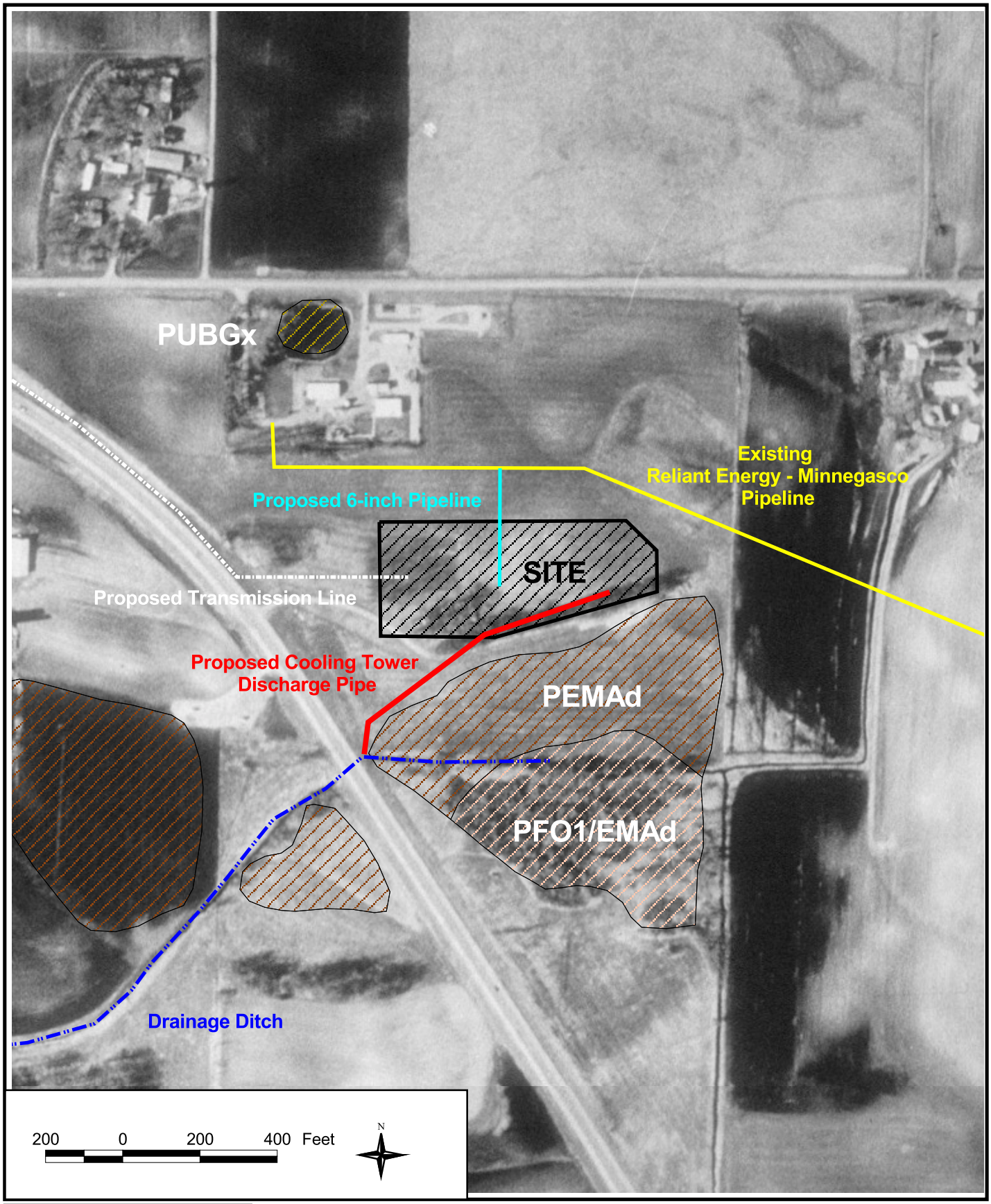
DRAWN: THH
CHK'D:
DATE: 04/24/02
SCALE: 1"=40'

JOB NUMBER

FIGURE 3

SHEET NUMBER GA-1

REVISION NUMBER 0



Waterville Combined Cycle Project

Figure 4
Aerial Photograph
NW 1/4, NE 1/4 Section 6, T108N, R22W

DATE: 3/8/02
REVISED: 6/17/02
SCALE: 1:4,136
DRAWN BY: AMRONAYNE
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Waterville Combined Cycle Project	**Figure 5** **Soils Map**	DATE: 3/8/02 REVISED: SCALE: NA DRAWN BY: AMRONAYNE R:\AVPROJ\2002\Sterlon_Industries\EAW.apr

Appendix A

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Twin Cities Field Office
4101 East 80th Street
Bloomington, Minnesota 55425-1665

MAR 26 2002

Ms. Angela Ronayne
Environmental Resources Group
1539 International Centre
900 Second Avenue South
Minneapolis, Minnesota 55402

Dear Ms. Ronayne:

This responds to your letter dated March 11, 2002, requesting information on threatened and endangered species for an electrical power generating plant. Simon Entergy proposes to build and operate a 25 to 43-megawatt power plant, pipeline, and access road in Waseca County, Minnesota.

Given the location and type of activity proposed, we have determined that the project is not likely to adversely affect any federally listed or proposed threatened or endangered species or their critical habitat. This precludes the need for further action on the project as required under section 7 of the Endangered Species Act of 1973, as amended. However, if the project is modified or new information becomes available which indicates that listed species may occur in the affected areas, consultation with this office should be reinitiated.

It appears from the map you provided that wetlands exist within the proposed construction site. Project design should include measures to avoid direct (site location) and indirect (staging equipment) impacts to wetlands.

We appreciate the opportunity to comment on the proposed project. If you have questions or require further assistance, please contact Ms. Laurie Fairchild at (612) 725-3548, extension 214.

Sincerely,

Dan P. Stinnett
Field Supervisor

MINNESOTA HISTORICAL SOCIETY

STATE HISTORIC PRESERVATION OFFICE

December 5, 2001

Ms. Barbara Johnson
Labno Environmental, Inc.
1751 W County Road B, Ste. 220
Roseville, MN 55113-4037

RE: Pre-EAW; combustion turbine at 25 MW & steam turbine at 14 MW on Minnegasco property
Waseca County
SHPO Number: 2002-0532

Dear Ms. Johnson:

Thank you for consulting with our office during the preparation of an Environmental Assessment Worksheet for the above referenced project.

Based on our review of the project information, we conclude that there are no properties listed on the National or State Registers of Historic Places, and no known or suspected archaeological properties in the area that will be affected by this project.

Please note that this comment letter does not address the requirements of Section 106 of the National Historic Preservation Act of 1966 and 36CFR800, Procedures of the Advisory Council on Historic Preservation for the protection of historic properties. If this project is considered for federal assistance, or requires a federal permit or license, it should be submitted to our office with reference to the assisting federal agency.

Please contact us at (651) 296-5462 if you have any questions regarding our comments on this project.

Sincerely,

Dennis A. Gimmestad
Government Programs and Compliance Officer

Minnesota Department of Natural Resources
Natural Heritage and Nongame Research Program, Box 25
500 Lafayette Road
St. Paul, Minnesota 55155-40
Phone: (651) 296-7863 Fax: (651) 296-1811 E-mail: sarah.hoffmann@dnr.state.mn.us

November 14, 2001

Barbara Johnson
Labno Environmental Inc.
1751 W. County Road B, Suite 220
Roseville, MN 55113

Re: Request for Natural Heritage information for vicinity of proposed Waterville Combustion Turbine, T108N R22W Sec. 6; Waseca County
NHNRP Contact #: ERDB 20020411

Dear Ms. Johnson,

The Minnesota Natural Heritage database has been reviewed to determine if any rare plant or animal species or other significant natural features are known to occur within an approximate one-mile radius of the area indicated on the map enclosed with your information request. Based on this review, there are no known occurrences of rare species or natural communities in the area searched.

The Natural Heritage database is maintained by the Natural Heritage and Nongame Research Program, a unit within the Division of Ecological Services, Department of Natural Resources. It is continually updated as new information becomes available, and is the most complete source of data on Minnesota's rare or otherwise significant species, natural communities, and other natural features. Its purpose is to foster better understanding and protection of these features.

Because our information is not based on a comprehensive inventory, there may be rare or otherwise significant natural features in the state that are not represented in the database. A county-by-county survey of rare natural features is now underway, but has not been completed for Waseca County. Therefore ecologically significant features for which we have no records may exist on the project area.

Please be aware that review by the Natural Heritage and Nongame Research Program focuses only on *rare natural features*. It does not constitute review or approval by the Department of Natural Resources as a whole. If you require further information on the environmental review process for other wildlife-related issues, you may contact your Regional Environmental Assessment Ecologist, Victoria Poage, at (507) 359-6073.

An invoice for the work completed is enclosed. You are being billed for map and database search and staff scientist review. Please forward this invoice to your Accounts Payable Department. Thank you for consulting us on this matter, and for your interest in preserving Minnesota's rare natural resources.

Sincerely,

Sarah D. Hoffmann
Endangered Species Environmental Review Coordinator

encl: Invoice

Appendix B

Unique No. 00215683

County Name Waseca

MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING RECORD

Minnesota Statutes Chapter 1031

Update Date 1992/01/17

Entry Date 1988/04/17

Township Name	Township	Range	Dir	Section	Subsection
	108	22	W	6	ABBA

Well Name SCHUETTE 3

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
DRIFT				177
SHAKOPEE			177	416
JORDAN			416	462

REMARKS, ELEVATION, SOURCE OF DATA, etc.

1122' CASED ELEV-TOP OF CASING. JUST NORTH OF SCHUETTE #2

DNR OBWELL 81019

USGS Quad Waterville Elevation 1122

Aquifer: CJDN Alt Id:

Report Copy

Well Depth 462 ft. Depth Completed 462 ft. Date Well Completed 1968/00/00

Drilling Method Mud Rotary

Drilling Fluid

Well Hydrofractured? ☐ Yes ☐ No

From ft. to ft.

Use Observation well

Casing Drive Shoe? ☐ Yes ☐ N

Hole Diameter

Casing Diameter Weight(lbs/ft)

5.5 in. to 416 ft

Screen N

Open Hole From 416 ft. to 462 ft.

Make Type

Static Water Level ft. from Date

PUMPING LEVEL (below land surface)

ft. after hrs. pumping g.p.m.

Well Head Completion

Pitless adapter mfr Model

Casing Protection ☐ 12 in. above grade

☐ At-grade(Environmental Wells and Borings ONLY)

Grouting Information Well grouted? ☐ Yes ☐ No

Nearest Known Source of Contamination

ft. direction type

Well disinfected upon completion? ☐ Yes ☐ No

Pump ☐ Not Installed Date Installed

Mfr name

Model HP 0 Volts

Drop Pipe Length ft. Capacity g.p.m

Type

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

Was a variance granted from the MDH for this Well? ☐ Yes ☐ No

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No.

License Business Name

Name of Driller

HE-01205-06 (Rev. 9/96)